

IN THE CLAIMS

Please cancel Claims 21 and 22, add new Claims 27 and 28, and amend the claims, without prejudice or waiver, as follows:

1. (currently amended) A flow control system, comprising:
 - a first fluid flowing at a first fluid flow rate;
 - a flow control valve through which a second fluid flows, the flow control valve having a coil and a spool, such that an electric current flowing through the coil generates an electromagnetic force on the spool;
 - a temperature sensor operable to sense ~~a parameter~~ a temperature of the second fluid;
 - a control system coupled to the temperature sensor and the coil, the control system operable to determine a desired flow rate of the second fluid based on the first fluid flow rate, ~~the control system further operable to adjust the electromagnetic force on the spool based on the sensed parameter to achieve the desired flow rate;~~
 - a flow sensor coupled to the control system, the control system operable to determine a measured flow rate of the second fluid based on the flow sensor, the control system further operable to compare the measured flow rate of the second fluid to an expected flow rate of the second fluid and to establish a scaling factor based on the comparison of the measured and expected flow rates of the second fluid, such that the control system is operable to adjust the electromagnetic force on the spool based on the temperature of the second fluid and on the scaling factor to substantially achieve the desired flow rate of the second fluid.
2. (currently amended) The flow control system of Claim 1, wherein the control system remembers a setting of the electric current from a previous demand for the second

fluid, and wherein the control system applies the remembered setting or holds the remembered setting for some time.

3. (currently amended) The flow control system of Claim 2, wherein the remembered setting is a last setting used during a the previous demand for the second fluid.

4. (original) The flow control system of Claim 1, wherein the first fluid is water, and the second fluid is a beverage syrup.

5. (original) The flow control system of Claim 4, wherein the water is carbonated water.

6. (original) The flow control system of Claim 1, wherein the first fluid is a beverage syrup, and the second fluid is water.

7. (original) The flow control system of Claim 6, wherein the water is carbonated water.

8. (original) The flow control system of Claim 1, and further comprising a shut-off valve, the shut-off valve operable to stop flow of the second fluid.

9. (original) The flow control system of Claim 8, wherein the sensor is located between the flow control valve and the shut-off valve.

10. (original) The flow control system of Claim 8, wherein the flow control valve, the shut-off valve, and the sensor are integrated.
11. (currently amended) The flow control system of Claim 1, wherein the temperature sensor is a single thermistor.
12. (original) The flow control system of Claim 1, wherein the control system controls a pulse width modulated signal to adjust the electromagnetic force on the spool.
13. (currently amended) The flow control system of Claim 1, wherein the ~~sensed parameter is flow rate~~ temperature sensor and the flow sensor are the same sensor.
14. (currently amended) The flow control system of Claim 1, ~~wherein the sensed parameter is temperature~~ and further comprising a first fluid sensor coupled to the control system, the control system further operable to determine the first fluid flow rate based on the first fluid sensor.
15. (withdrawn)
16. (withdrawn)
17. (withdrawn)
18. (currently amended) A method of operating a flow control system wherein there

are a plurality of demands for flow separated by times when there is no demand for flow,
comprising:

determining a fluid flow rate of a first fluid;

determining a desired flow rate for a second fluid based on the fluid flow rate of
the first fluid;

sensing a parameter of the second fluid; ~~and~~

setting a flow rate of the second fluid with a control setting based on the sensed
~~parameter of the second fluid to~~ substantially achieve the desired flow rate, wherein
setting the flow rate comprises adjusting a position of a spool by adjusting an
electromagnetic force on the spool, and wherein the control setting varies from a first
control setting to a last control setting during a demand for flow; and

establishing the control setting by remembering the last control setting from a
previous demand for flow and applying said last control setting from said previous
demand for flow as the first control setting in a subsequent demand for flow, and then
varying the control setting based on the sensed parameter of the second fluid.

19. (original) The method of Claim 18, wherein adjusting the electromagnetic force
comprises adjusting a pulse width modulated signal sent through a coil.

20. (original) The method of Claim 18, and further comprising dithering the spool.

21. (cancelled)

22. (cancelled)

23. (original) The method of Claim 18, wherein the sensed parameter is flow rate.
24. (original) The method of Claim 18, wherein the sensed parameter is temperature.
25. (original) The method of Claim 24, and further comprising measuring a flow rate of the second fluid, and wherein setting the flow rate of the second fluid is based on the sensed temperature and the measured flow rate.
26. (original) The method of Claim 18, wherein determining the fluid flow rate of the first fluid comprises assuming the fluid flow rate of the first fluid.
27. (new) The method of Claim 18, and further comprising:
measuring a flow rate of the second fluid;
comparing the measured flow rate of the second fluid to an expected flow rate of the second fluid; and
establishing a scaling factor based on the comparison of the measured and expected flow rates of the second fluid, such that varying the control setting is further based on the scaling factor.
28. (new) The flow control system of Claim 1, wherein the control system is operable to establish the scaling factor intermittently, and wherein the scaling factor is established during one or more relatively long flow cycles.